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10/693,532	10/23/2003	J. Rodney Walton	020573	2316

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EXAMINER	
TSEGAYE, SABA	

ART UNIT	PAPER NUMBER
2419	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/693,532	WALTON ET AL.	
	Examiner	Art Unit	
	SABA TSEGAYE	2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 December 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-16,39,40,42-77 and 79-99* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3-16, 39, 40, 42-77 and 79-99* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

2. Claims 1, 3-16, 39, 40, 42-77 and 79-99 are pending. Currently no claims are in condition for allowance.

Claim Rejections - 35 USC § 102

3. Claims 1, 3-11, 42, 43 and 48-54 are rejected under 35 U.S.C. 102(e) as being anticipated by Myles et al. (US 6,879,579 B1).

Regarding claims 1 and 54, Myles discloses a method of accessing a wireless multiple-access communication system, comprising:

receiving at least one broadcast message including information regarding configuration of at least two contention-based random access channels for a frame (each up-link channel is defined to be in one of three states; empty, reserved or owner. The hub station transmits the state of the next channel (along with other control fields) to the mobile station in the header field of each down-link slot; column 11, lines 1-6);

determining a current operating state of a terminal (registered or unregistered (column 8, lines 23-26));

selecting one contention-based random access channel from among at least two contention-based random access channels based on the current operating state (registered terminals use one type of access channel, while unregistered terminals use another type of access

channel; selecting from a plurality of channels based on "an empty-state", "a reserved-state", or "an owner-state" column 4, lines 55-60); and

transmitting a message on the selected random access channel to access the system during the frame (a mobile station transmits messaged based on "an empty-state", "a reserved-state", or "an owner-state; up-link and down-link slot pairs are scheduled over a frame (column 10, lines 12-13; column 11, lines 7-11));

wherein the at least two random access channel include a first random access channel used by registered terminals for system access (registered terminals access the system using reserved and owner channels (column 11, lines 13-16); reserved-state provides a channel to which a station having made a reservation with the hub and the owner-state provides a channel to which only the owning station has access (column 4, lines 47-51)) and a second random access channel used by registered and unregistered terminals for system access (empty-state provides a channel to which **any mobile station** can have access; column 4, line 45).

Regarding claim 3, Myles discloses the method, wherein transmissions on the first random access channel is compensated for propagation delay (column 9, lines 51-62).

Regarding claim 4, Myles discloses the method wherein the current operating state is indicative of whether or not the terminal has registered with the system (column 8, lines 40-44).

Regarding claims 5 and 16, Myles discloses the method of claim 1, wherein the current operating state is indicative of whether or not the terminal can compensate for propagation delay to an access point receiving the message (see fig. 10; column 9, lines 51-62).

Regarding claims 6-8, Myles discloses that users are informed interference via a feedback channel, and if interference has occurred, the packet is retransmitted after a random time delay (see figs. 11b-c; column 8, lines 45-50).

Regarding claim 9, the method of claim 1, wherein the transmitting includes selecting a slot from among a plurality of slots available for the selected random access channel, and transmitting the message in the selected slot (column 13, lines 1-10).

Regarding claims 10 and 11, the method of claim 1, wherein the message includes an identifier for the terminal (see fig. 9).

Regarding claim 42, Myles discloses the method wherein receiving the at least one broadcast message comprises receiving at least two broadcast messages each associated with a different of the at least two random access channels (column 10, lines 12-18; line 62-column 11, line 6).

Regarding claim 43, Myles discloses the method further comprising determining a slot to transmit the message on the one contention-based random access channel based upon a slot assigned to the at least one contention-based random access channel in the at least one broadcast message and wherein transmitting comprises transmitting the message in the slot of the frame (column 11, lines 1-6).

Regarding claim 48, Myles discloses the method wherein determining the current operating state of a terminal comprises determining if the terminal is scheduled and the method further comprising utilizing a data channel, and not selecting one contention-based random access channel, for transmission (column 13, lines 3-10).

Regarding claim 49, Myles discloses the method wherein a first contention-based random access channel of the at least two contention-based random access channels corresponds to a contention-based random access channel used by a terminal after acquiring system frequency, wherein determining comprises determining whether the terminal has acquired the system frequency, and wherein selecting comprises selecting the first contention-based random access channel as the one contention-based random access channel when the terminal has acquired the system frequency and is not registered (column 11, lines 7-11).

Regarding claim 50, Myles discloses the method of claim 1, wherein transmitting the message comprises transmitting a different message format (empty, reserved or an owner state) on each of the at least two contention-based random access channels (column 4, lines 40-45).

Regarding claim 51, Myles discloses the method further comprising receiving an assignment responsive to the message from a base station (column 9, lines 54-60).

Regarding claim 52, Myles discloses the method wherein receiving the assignment comprises receiving an acknowledgement in a message including the assignment (column 9, lines 54-60).

Regarding claim 53, Myles discloses the method further comprising determining scheduling information of the assignment for a channel distinct from the at least two contention-based random access channels (column 10, line 62-column 11, line 6).

4. Claims 15, 16, 39, 40, 66 and 83 are rejected under 35 U.S.C. 102(e) as being anticipated by Noerpel et al. (US 2003/0153320 A1).

Regarding claim 15, Noerpel discloses a method of accessing a wireless multiple-access multiple-input multiple-output communication system, comprising:

determining whether a terminal is registered or unregistered with the system (synchronized; unsynchronized (Abstract; 0013));

if the terminal is registered (synchronized), transmitting a first message on a first contention-based random access channel to access the system (the second contentions channels are used by synchronized user terminal for transmitting packet RACH or PRACH); and

if the terminal is unregistered (unsynchronized), transmitting a second contention-based message with a different format (a first contention channel is used by unsynchronized user terminals to access the system and request (RACH message) a traffic channel. The PRACH channels are narrow band channels (the first contention channel has a duration at least equal to the duration of a RACH message plus the maximum timing uncertainty between user terminals

in a given spot beam; the second contention channel is shorter in duration than the first contention channel…); (Abstract; 0013; 0030)).

Regarding claims 39 and 40, Noerpel discloses a terminal in a wireless multiple-access communication system, comprising:

means for determining a current operating state of the terminal (synchronized; unsynchronized (Abstract; 0013)); means to select one contention-based random access channel from among at least two contention-based random access channels (selecting form two types of contention channels (Abstract; 0013)) for use to access the system based on the current operating state (based synchronized and unsynchronized user terminals), wherein the at least two random access channels use different message formats (the first contention channel has a duration at least equal to the duration of a RACH message plus the maximum timing uncertainty between user terminals in a given spot beam; the second contention channel is shorter in duration than the first contention channel… (0013; 0030)); and

means for transmitting a message on the selected contention-based random access channel (0013-0014).

Regarding claims 16, 66 and 83, Chang discloses the method of claim 1, wherein the means for determining the current operating state is operative to determine the current operating state based upon whether or not the terminal can compensate for propagation delay to an access point receiving messages sent by the terminal (0013).

5. Claims 15, 16, 39, 40, 55-58, 62-66, 68, 69, 71-73, 79-83, 87, 88, 90-92 and 97-99 are rejected under 35 U.S.C. 102(e) as being anticipated by Chang et al. (US 6,532,225 B1).

Regarding claim 15, Chang discloses a method of accessing a wireless multiple-access multiple-input multiple-output communication system, comprising:

determining whether a terminal is registered or unregistered with the system (initial access; ongoing session access);

if the terminal is registered, transmitting a first message on a first contention-based random access channel to access the system (F-RACH is used during ongoing sessions (registered) column 5, lines 25-34); and

if the terminal is unregistered (initial), transmitting a second contention-based message with a different format (PRACH is used during initial access (column 4, lines 30-36).

Regarding claims 39 and 40, Chang discloses a terminal in a wireless multiple-access communication system (PRACH (slow); F-PACH (fast)), comprising:

means for determining a current operating state of the terminal (initial access; ongoing session access); means to select one contention-based random access channel from among at least two contention-based random access channels (selecting form PRACH or F-PACH) for use to access the system based on the current operating state (initial access; ongoing session access), wherein the at least two random access channels use different message formats (F-PACH contain information on the specific TBF being referenced, i.e., the uplink TFI assigned to the mobile unit ; for PRACH, the mobile unit need and extended synchronization sequence or and extended guard period (column 5, lines 20-55)); and

means for transmitting a message on the selected contention-based random access channel (column 4, lines 30-39; column 7, line 45-column 8, line 35).

Regarding claims 65 and 82, Chang discloses wherein the means for determining the current operating state is operative to determine the current operating state based upon whether or not the terminal has registered with the system (determining whether access request **for initial access or access during an ongoing session**).

Regarding claims 16, 66 and 83, Chang discloses the method of claim 1, wherein the means for determining the current operating state is operative to determine the current operating state based upon whether or not the terminal can compensate for propagation delay to an access point receiving messages sent by the terminal (column 9, lines 9-35).

Regarding claims 68, 69, 87 and 88, Chang discloses wherein the means for transmitting messages is operative to process the messages to include an identifier for the terminal (a unique Uplink State Flag (USF) is assigned to specific mobile unit during initial access; column 4, lines 10-25).

Regarding claims 55-57, 71-73 and 90-92, Chang discloses further comprising means for processing received information corresponding to parameters conveying configuration information for at least the first contention-based random access channel (column 4, lines 42-50; column 6, lines 44-53).

Regarding claim 58, Chang discloses the method further comprising determining a slot to transmit the message on the first contention-based random access channel based upon the parameters and wherein transmitting comprises transmitting the first message in the slot (column 6, lines 44-61).

Regarding claims 62, 63, 79, 97 and 98, Chang discloses further comprising means for receiving an assignment responsive to the message fro a base station and means for receiving an acknowledgement in a message including the assignment (column 4, lines 30-50).

Regarding claims 64 and 99, Chang discloses further comprising means for determining scheduling information of assignment for a data channel distinct from the at least two contention-based random access channel (column 9, lines 59-67).

Regarding claim 80, Chang discloses the terminal wherein the assignment comprises information for utilizing at least the first and second contention based random access channels and a forward link data channel (column 4, lines 42-50).

Regarding claim 81, Chang discloses wherein the assignment comprises information for utilizing at least the first and second contention based random access channels and a reverse link data channel (column 4, lines 42-50).

Claim Rejections - 35 USC § 103

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Myles in view of du Crest et al. (US 2004/0047292).

Myles discloses all the claim limitations as stated above. Further, Myles discloses that each of the stations is assigned a unique identification. However, Myles does not expressly disclose a common identifier used by unregistered terminals.

Crest teaches that when a traffic channel shared by more than one user terminal, an identifier can determine terminal by a temporary flow identity. This identifier survives only for the duration of the channel, i.e. it does not code for the user terminal uniquely but is merely used to identification of messages to or from a particular user terminal for the time period of the respective channel transmission (0057).

It would have been obvious to one ordinary skill in the art at the time the invention was made to use the teachings from Crest of using a common identifier in the system of Myles. One of ordinary skill in the art would have been motivated to do this because using a common identifier allows reusing and sharing the same identifier.

7. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Myles in view of Caldwell (US 2002/0122393).

Myles discloses all the claim limitations as stated above, except for multiple-access communication system supports terminal with multiple antennas.

Caldwell teaches in Fig. 1, a mobile terminal that comprises two antennas 12 and 26.

It would have been obvious to one ordinary skill in the art at the time the invention was made to use the teachings from Caldwell of using multiple antennas in the system of Myles. One of ordinary skill in the art would have been motivated to do this because multiple antennas allows the mobile terminals to measure the quality of signal reception by each of the two antennas and selects the one of the at least two antennas providing the better quality of signal reception.

8. Claims 14 and 44-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Myles in view of Fukuda (US 6,956,813 B2).

Myles discloses all the claim limitations as stated above. However, Myles does not expressly disclose that the multiple-access communication system uses OFDM.

Fukuda teaches, in figs. 8 and 12, a communication band that is divided into eight OFDM sub-bunds (column 8, lines 55-67; column 10, lines 6-column 11, line 16).

It would have been obvious to one ordinary skill in the art at the time the invention was made to use OFDM in the communication system of Myles as taught by Fukuda. One ordinary skill in the art would have been motivated to do this because using OFDM reduces multiple-access interference so that spectral efficiency and high data rate limits in a common wireless channel are increased.

9. Claims 59-61, 74-77 and 93-96 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang in view of Fukuda (US 6,956,813 B2).

Chang discloses all the claim limitations as stated above. However, Chang does not expressly disclose that the multiple-access communication system uses OFDM.

Fukuda teaches, in figs. 8 and 12, a communication band that is divided into eight OFDM sub-bunds (column 8, lines 55-67; column 10, lines 6-column 11, line 16).

It would have been obvious to one ordinary skill in the art at the time the invention was made to use OFDM in the communication system of Chang as taught by Fukuda. One ordinary skill in the art would have been motivated to do this because using OFDM reduces multiple-access interference so that spectral efficiency and high data rate limits in a common wireless channel are increased.

10. Claims 67, 84 and 86 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang in view of Lee et al. (US 7,453,844 B1).

Chang discloses all the claim limitations as stated above, except for determining the current stated based upon a required received SNR.

Lee teaches that a wireless device is granted or refused registration with the channel based on factors relating to the device, the channel (such as signal strength and other channel characteristics) and/or other channels that the device could access (column 8, lines 60-67).

It would have been obvious to one ordinary skill in the art at the time the invention was made to use the teachings from Lee of determining the current operating stated based upon received SNR in the system of Chang in order to maintain quality of service and to ensure that wireless devices are allocated efficiently among the available channels (column 3, lines 20-35).

11. Claims 70 and 89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang in view of du Crest et al. (US 2004/0047292).

Chang discloses all the claim limitations as stated above. Further, Chang discloses that each of the stations is assigned a unique identification. However, Chang does not expressly disclose a common identifier used by unregistered terminals.

Crest teaches that when a traffic channel shared by more than one user terminal, an identifier can determine terminal by a temporary flow identity. This identifier survives only for the duration of the channel, i.e. it does not code for the user terminal uniquely but is merely used to identification of messages to or from a particular user terminal for the time period of the respective channel transmission (0057).

It would have been obvious to one ordinary skill in the art at the time the invention was made to use the teachings from Crest of using a common identifier in the system of Chang. One of ordinary skill in the art would have been motivated to do this because using a common identifier allows reusing and sharing the same identifier.

12. Claim 85 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chang in view of Hount (US 6,868,079 B1) et al.

Chang discloses all the claim limitations as stated above, except for retransmit the message until an acknowledgement is received.

Hunt teaches radio communication system with request re-transmission until acknowledged (column 2, lines 44-47).

It would have been obvious to one ordinary skill in the art at the time the invention was made to add a system that repeating the request until an acknowledgement is received, such as

suggested by Hunt, to the system of Chang in order to improve performance and provide reliable communication system.

Response to Arguments

13. Applicant's arguments with respect to claims 1, 3-16, 39, 40, 42-77 and 79-99 have been considered but are moot in view of the new ground(s) of rejection.

14. Applicant argues (Remarks, page 12) that Myles fails to teach "*determining a current operating state of a terminal" and selecting one contention-based random access channel from among at least two contention-based random access channels based on the current operating state*." Examiner respectfully disagrees. Myles clearly discloses that registered terminal use one type of access channel (reserved or owner), while unregistered terminal use another type of access channel (empty). This shows that based on the terminal state such as registered or unregistered contention-based random access channel is selected from among empty, reserved or owner channels.

Applicant argues (page 13) that Myles does not teach or suggest *any type of random access channels for use by both registered and unregistered mobile stations, as recited in claim 1*. Examiner respectfully disagrees. Myles clearly discloses registered terminals use reserved and/or owned access channels. Unregistered terminal use different type of access channel (empty). Further, Myles discloses that the empty-state provided a channel to which **any station** (both registered and unregistered terminals) can access.

Still on page 13, Applicant agrees that Myles teaches that registered terminals use one type of access channel, while unregistered terminal use another type of access channel. However,

Applicant argues that Myles does not teach or suggest that *a registered mobile station can use registration channels dedicated for use by unregistered mobile stations*. While this may be true, the claim language is much broader and does not require these limitations. Furthermore, Myles clearly discloses that the empty-state provided a channel to which **any station** (*not only registered mobile station as suggested by Applicant*) can have access (column 4, lines 45, 61; column 6, lines 5-15).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SABA TSEGAYE whose telephone number is (571)272-3091. The examiner can normally be reached on Monday-Friday (7:30-5:00), First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on (571) 272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Saba Tsegaye

Examiner
Art Unit 2419

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2/2/09